DOCUMENT RESUME

ED 464 203 CE 082 666

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|---|---|
| AUTHOR | Smith, Dorothy E. |
| TITLE | The Storage and Transmission of Men's Non-Formal Skills in Working Class Communities: A Working Paper. NALL Working Paper. |
| INSTITUTION | Ontario Inst. for Studies in Education, Toronto. New Approaches to Lifelong Learning. |
| SPONS AGENCY | Social Sciences and Humanities Research Council of Canada, Ottawa (Ontario). |
| REPORT NO | NALL-WP-38-2001 |
| PUB DATE | 2001-00-00 |
| NOTE | 14p. |
| AVAILABLE FROM | For full text: http://www.oise.utoronto.ca/depts/sese/csew/nall/res/38storageand trans.htm. |
| PUB TYPE | Opinion Papers (120) |
| EDRS PRICE | MF01/PC01 Plus Postage. |
| DESCRIPTORS | *Blue Collar Occupations; Communication (Thought Transfer); Cultural Background; Cultural Context; Cultural Interrelationships; Developed Nations; Dislocated Workers; Economic Change; Ethnography; Foreign Countries; Industrial Personnel; Industrial Structure; *Industrial Training; Information Transfer; Job Layoff; Job Skills; Labor Market; *Males; *Nonformal Education; *On the Job Training; Postsecondary Education; Social Background; Social Structure; Structural Unemployment; Technological Advancement; *Working Class |
| IDENTIFIERS | Management Control; Manual Skills; Ontario |

ABSTRACT

A descriptive study observed the transmission of manual job skills from older to younger men in working class communities in Ontario and the effects of massive downsizing in industrial plants on this process. Current as well as previous ethnographic research was used. Some of the outcomes of the continual downsizing included the following: (1) the restructuring that destroyed many working-class communities also destroyed the social organization that stored and transmitted manual skills among men in working class communities; (2) within the workplace, the development of managerial technologies expropriated workers' skills and supported greater control of management over the work process and training; (3) the informal relationships among working-class men that were part of the community as well as the workplace were weakened by increasing technology, decreasing workforce, and managerial control; and (4) this process was gender-specific to men and included the transmission of values, such as anti-intellectualism and disdain for academic occupations. (Contains 13 references.) (KC)

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ED 464 203

NALL Working Paper #38-2001

# The storage and transmission of men's non-formal skills in working class communities: a working paper

Dorothy E. Smith

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## Introduction

This paper comes midway out of a study that proposes to explore the relationships between the great working-class communities and the industries they both sustained and were sustained by in terms of the production, storage and transmission of skills. Among men, so-called manual skills were learned in part experientially, on-the-job, but they were also learned intergenerationally both in the community and in the workplace. My interest is in exploring the social organization and relationships that stored and transmitted skills as men learned them as they were elaborated and refined experientially, as they responded to technological changes. The individuated formulations of skill as it is recognized in personnel files or as qualifications is a barrier to learning more about the social organization within which skills have been learned and transmitted within the working class. I want to locate forms of organizing the storage and transmission of skills-defined as nonformal because they have not been 'recognized' by formal educational processes resulting in definite qualifications under state regulation-that have been integrated in the localized organization of working class communities and have intersected community and workplace.

This paper represents a preliminary exploration of ethnographic studies of workplace and working-class community that give clues to the character of relations that reproduced skills among working class men across generations. It has been written as a working paper in preparation for further research. Its aim has been to isolate in a preliminary way the aspects of the social organization of the working class in both the workplace and the community and to learn as much as possible about the largely hidden history of an aspect of the social organization of the working class in the North America that was. My interest is in prying open a moment in the past when access to workplace skills among men was largely controlled by working-class men. I am interested in the former dependence of industrial production on systems of storing and transmitting skills that were buried in the relations between stable working class communities and large-scale industrial enterprises. These systems of storing and transmitting informal skills have been disrupted and virtually wiped out in processes of technological and managerial restructuring which have radically reduced the numbers of workforce in a given industry and hence its ability to sustain a stable working class community over several generations.[1]

Part of what I want to do is to see the dislocation of formerly effective and productive modes in which skills were produced and reproduced within the working class, whether in the community or in the workplace, as integrated in a process of class struggle in which the managerial organization of large-scale corporations that has aimed at reducing not just labour costs but the dependence on capital on

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resources possessed and independently reproduced within the working class. I am interested in bringing into focus the social relations of skill storage and transmission at a particular historical juncture in a long struggle between capital and labour over control of skills, or, using Marx's formulation, of the 'knowledge, judgment and will" of the 'producers'. In 1974 Harry Braverman's (1974) study of Labor and Monopoly Capital was published. It initiated a major debates focused on his thesis of the progressive degradation of labour as a consequence of forms of 'scientific' management, coupled with technological change. One side of the debate foregrounded the technological changes that were represented as giving workers greater control over their work situation, freeing them from the constraints and stress of automated work processes (Blauner 1964; Hirschhorn 1984; Zuboff 1988). Rather than degradation, these writers saw technological change as contributing to an upgrading of workers' skills, particularly their conceptual skills. In contention with them are those who emphasized the 'deskilling' effects of the new forms of automation and new managerial strategies resulting together in an increasingly effective subordination of workers to the changing regime of accumulation. (Thompson 1989; Wood 1989; Vallas and Beck 1996)

**The contingent destruction of the worker-controlled system of storing and transmitting skills**

**Restructuring and the working class community**

When the issue of loss of control over skills and of the degradation of labour is examined in terms of the intersecting social relations, I suggest that what comes into view is the progressive destruction of a 'system' of storing, producing, and reproducing the skills of hand, eye, and brain which was lodged in the intersection of industrial enterprise and working class community, was largely organized and reproduced by working class men outside the formal educational processes instituted by the state, and on which the great industrial engine of capitalism that we know as 'Fordism' depended. I do not view this line of argument and investigation as conflicting with the emphasis on skills as they are operative in the workplace and on the changing nature of controls in the workplace (Burawoy 1983). Rather, I am concerned to examine the storage and transmission of skills as a social organization internal to the working class cross-cutting workplace and community. I write of this social organization as in the past because I want to suggest that a contingent effect of the restructuring and deindustrialization hot has largely destroyed the great working class communities sustained by manufacturing industries employing thousands, even hundreds of thousands of men, has been the destruction of the system through which non-formal skills were reproduced among men informally both in the community and in the workplace, and hence the destruction of the social relations sustaining working class control over the production, storage, and transmission of skills.

I have been proposing that the great working-class communities of the past were engines reproducing manual skills both those that created a generalized level of manual accomplishment in the male working class popular, knowledge of the use of tools including increasingly manual tools of considerable technological sophistication as these were developed for home use, a culture according respect to men who excelled in skills and knowledge, both those relevant to non-workplace activities, home renovation and repair , automotive repair and reconstructions, and so on, and those produced and reproduced in the workplace relying to considerable extent on an experiential process of learning often over considerable periods of time. The former, I am suggesting, were foundational to the latter and created a reservoir of human capital that was certainly deployed in the interests of working class communities and individuals, but were also surely of direct and indirect, though always invisible benefit to capital. In the last twenty or thirty years we can identify two major developments that have radically undermined the engine of skills storage and transmissions that had been vested in a social organization among working class men intersecting workplace and community. This paper is no more, at present, than background to the direct investigation of the presence of these social relations and organization in the steel industry in Hamilton, Ontario, as it was before the 1980s when technological and managerial restructuring made deep inroads into the workforce and hence into the economic foundation of the working class community that had sustained and been sustained by the industry since the nineteenth century.

That technological innovations and other forms of restructuring aim are reducing labour costs is scarcely news. It is succinctly stated in Corman, et al.

The overall result of corporate "downsizing' is not jobs moving offshore so much as industrial

employment disappearing for good... these trends are not new but are a further extension of a persistent tendency towards capital-intensive, labour-displacing forms of technological change, as productivity gains are achieved by cutting payroll costs to the bone.

The virtual elimination of the working-class community storing and transmitting skills from generation, as well as the distinctive working-class versions of masculinity (including endurance and acceptance of physical danger- Willis 1979), implies as a contingent effect the destruction of the social organization reproducing skills and masculine values across generations.

In Hamilton, as elsewhere, the new jobs in the 1980s were being furnished by small firms operating mostly in the service sector. The steel industry, while still central to the city's economy, had ceased to be a source of employment for working-class male youths graduating from the city"s high schools, whose fathers, in many cases, were steelworkers. . . [i]ncreasingly, steelworkers were older men nearing retirement age: the average employee at Hilton Works has now worked for Stelco for more than twenty-five years. 'Global restructuring: has produced a deep generational split in the working class. (Corman et al. 10).

**Technologies of managerial expropriation of skills and control of the internal corporate labour market**

At the same time, we can find the systematic development and deployment of managerial technologies by both capital and state, that take over and displace the skills training functions formerly internal to intergenerational and peer relationships among working-class men. For example, in the early 1980s, the government of Ontario in conjunction with the representatives of the plastics processing industry were making use of a procedure that involved working with a group of workers in the industry to construct detailed explications of the steps involved in the performance of given tasks. These explications could then be used as the training objectives of formally designed training programs. The program was instituted because the expanding industry was experiencing a shortage of skilled/experienced operatives (the plastic industry locked the continuities of traditional working-class skills available to other industries.) The then Ministry of Skills Development was called on to develop a systematically formulated modules specifying in detail the tasks making up the skills required for a given job or position and within each task, the steps needed to complete it. The procedure was one that brought together a group of experienced workers and, under the guidance of a community college instructor experienced in the technique, have them put together their own knowledge into the formalized descriptions required by the DACUM method. What we were observing was a transfer of the nonformal knowledges stored and transmitted among workers on the shopfloor of plastics processing companies into a system that was controlled by government educational institutions and/or directly or indirectly by corporations in the business of plastics processing. In the ongoing efforts of capital to reduce the labour-cost component of production, the problem of production's dependence on skills reproduced outside the formal educational and training system and controlled by workers themselves has had two solutions: the technological transformations which reduce radically the dependence of the production process on workers' non-formal skills (Vallas and Beck); and the generally less well understood, development of 'technologies' enabling the extraction of non-formal skills and knowledge-bases in the working class and their incorporation into formalized training processes.

Some twenty years ago I was witness (on the union side) of the hearing of a grievance brought by Mine Mill against Falconbridge Mines. The issue was control of access to the position of Repair Crew Helper. According to the contract access to this position was through bidding on the basis of seniority. Informally, we learned, it had been a position where older men who were no longer up to the physical demands of drilling and shiftwork could take advantage of their extensive experientially based knowledge of the mine, its people, and its workings, in a position that worked only the day shift. The issue being arbitrated at the hearing was the company's introduction of a test as a condition of access. A miner (actually French-speaking) had bid for the job, but had been turned down because he failed the test. He was, incidentally, French-speaking, and the language of the test was English (this was made an issue at the hearings).

In the course of the arbitration hearing, It became clear that the company was not concerned about the qualifications of this particular candidate for the position. Rather they had been concerned to substitute

formalized tests for seniority as a criterion for the position. The formalized tests were a means through which management could control more directly the internal labour market of the mine in which the foremen had traditionally played a major part. The insertion of a formally, textual, process into movements into positions meant bypassing the foreman, and hence bypassing the non- formal reciprocities between foremen and workers who belonged to, the same local community. Management wanted selection procedures wholly controlled by management and regulated in ways that fully accountable within its bureaucratic regime (Burawoy 1983) and system of accounting. The issue is more than one of management control; it is also one of the articulation of controls into an overall system of technical managerial organization. For a period some ten years earlier, Wallace Clement has described the introduction of similar managerial technologies at Inco.

> In 1970 Inco undertook a pilot experiment in "functional [286] modular training." Called the Instrumentation Training Program, it instructed forty instrument mechanics in the maintenance of instrument control systems for use in all its automated plants. First all processes and instrument equipment had to be surveyed and modules designed to teach the mechanics how to test and repair the equipment. The fact that this was necessary reflects the increased use of instrumentation in Inco surface operations. Traditionally the training for this work was a four-year apprenticeship, but when new techniques were introduced at the Copper Cliff Nickel Refinery and elsewhere, a shorter training period had to be devised. According to a senior Inco official involved in implementing the system, "the increased needs were imposed by new technology; traditional training couldn't respond." The use of the modular system shortened the qualification time from four to two years, obviously an advantage to the company. This modular training program is a registered trade in Ontario, but it is a non-regulated trade, which means that the government does not supervise the course content. This is different from the apprenticeship program, where the government specifies the content and provides a broader training package. Here was the basis for Inco's objection to apprenticeships: they contained much training not needed for specific work at Inco plants. Management wanted something tailormade. (Clement 1981: 287)

Not only was the time taken to train shortened, it could also be taken out of the hands of trades, out of the jurisdiction of government, and incorporated into the corporation's managerial regime.

The significance of the introduction of modular approaches to training and internal access to jobs may also be a further projection of managerial control into the control by workers of the shopfloor. Whatever their allegiances, foremen came up through the ranks and were socially part of the working class. Foremen were in charge of the internal labour market. In the hardrock mining context, including the Falconbridge Mine involved in the arbitration hearing I participated in, men were moved around in the mine on the say-so of foremen.

In 1973 a Task Force on Industrial Training set up by the Manpower Training Branch of the Ministry of Colleges and Universities reported "modular training" is recommended as a means of meeting training needs identified by 'industry.'

> In the 1950s and early 1960s changing labour market conditions together with public opinion caused the nature of the industrial manpower training problems facing Ontario to be altered greatly. During the late fifties public pressure was placed on government to support training-in-industry in addition to the traditional regulated apprenticeship. It was felt that apprenticeship did not adequately meet industry's needs, particularly in manufacturing, and that it was not appropriate for retaining, upgrading, and skill maintenance programs. Systems of industrial training less rigid than those typically available under apprenticeship legislation were required. Concern was focused on the way in which industrial training had been organized around specific occupations rather than in relation to actual functions of workers on the job. It was argued that workers often became locked into specific occupations and were unable, because of the specialization of their training, to adapt to differences in skill requirements resulting from technological change. (Ontario Ministry of Colleges and Universities 1973: 174)

Specious as much of this argument is, it is clear that the introduction of modular methods of analyzing

skills and training objectives was aimed at securing managerial control over precisely those processes of skills acquisition that had been controlled largely by workers on the shopfloor or down the mine. It was the Canadian Manufacturers Association that was pushing for the introduction of a modular approach to skills training (Ontario, Report of the Select Committee on Manpower Training, Hon. J. R. Simonett, Chairman (February, 1963). Modular treatment of skills enables the shopfloor knowledge of workers to be analysed as detailed sequences that could be produced as units of training. Course units could be created tailored specifically to the requirements of the company. The evolution of internal hierarchies among workers in the plant is bypassed; the 'surplus' of skills and experience embodied in older workers could be resolved into standardized and reproducible training units; technological changes could be prepared for by designing appropriate modules; the internal labour market of plant or corporation could be fully regulated by using formalized tests and formalized training objectives and products. In one of the plastics processing plants we visited -- the rump of a much larger complex, originally manufacturing tires, which had been translated to the southern United States, the personnel manager complained to us about senior workers who refused to participate in an effort to draw on their knowledge in the making of training modules for the parent company with headquarters in Akron, Ohio. It was clear that the company's interests were not in controlling the skills resources of this small plant, but in being able to transfer skills that had been created and reproduced among workers in the larger manufacturing plant into a form that could be reproduced within the corporation at large.

Such changes in managerial technologies aim directly at managerial control over the internal labour market processes (not, perhaps, properly conceptualized as a 'market'). They also reach as effects into the community. This paper is written to clarify the research problem. It draws in part on earlier research done by George Smith and myself in the plastics processing industry and in part on library research into ethnographic accounts of a variety of workplace situations and of working class communities. Since so for as Michelle Webber and I could discover there were no studies that directly addressed the relations that are to be explored, I have had to rely on those resources, relatively sparse, which happen to include accounts, generally rather scrappy, of aspects of non- formal skills learning processes and relations. Characteristically such resources, with very rare exceptions (Halle; Nash), observe the conventional boundaries between workplace and community that capital itself has generated. Hence information about the skills- learning practices characteristic of a given workplace gives no clue to how these may have spilled over into or been consequential for or even arisen out of relations within the community or union local. One of those involved in the arbitration hearing described to me some of the ways in which the shopfloor hierarchy intersected with that of the local community. Men in the community would keep in with foremen in the mine where they were employed by giving them occasional gifts of liquor or game from hunting expeditions. Though he recognized the implications for the union, he had mixed feelings about the introduction of tests as a means of accessing positions since he saw it as breaking the arbitrary powers of foremen. Such an account of the intersection of status and, in this case, power in the workplace with status in the working class community represents, I believe, only the tip of the iceberg. We can find in accounts of workplace skills hierarchies references here and there to experienced workers protecting the specialized knowledge they had developed over the years from other workers as well as from management (Vallas and Beck). What kind of status was accorded such men in the community? Might familial or friendship relationships originating outside the workplace have been involved in the willingness of a senior man to take on and train a younger? And, in respect to the transmission of skills, how were manual skills (knowhow, uses of tools, knowledge of materials, and so on) transmitted across generations and among peers? What kinds of associations among men in the community created opportunities for the discussion of situations in the workplace? This paper is written in advance of an ethnography of the past, largely relying on oral historical methods, that is planned for later this year to learn something about the nonformal interchange between community and industry that constituted that system of storing and transmitting skills on which large-scale industry relied.

**Skills storage and transmission systems in the workplace**

George Smith's and my field studies of skills training in the Ontario plastics industry in the 1980s provided us with several accounts of manufacturing plants where skills training was exclusively worker to worker and on the shopfloor. Plastics was then and still is a relatively new industry. In many companies, the knowledge stored in the workforce and even in management is largely a product of experiential learning passed on by precept and example and learned hands-on. The Compton Company was one such, unusual in that management as well as supervisors had come up through the shopfloor

process of skills training.

> The Compton Company produces a range of standardized products using automated and computerized machinery. All training at the Compton Company is hands-on (with the exception of short courses in health and safety.) With the exception of two people in maintenance who have European training, supervisors, department heads and the general manager himself have all learned the business of plastic processing through experience and learning from others with experience. The replication of its skills-through-experience workforce is a routine aspect of how the company operates and is integrated into the supervisory hierarchy. People come into the plant at the labouring level. Not much training is involved at this level: 'in most cases it's on-the-job training for two or three days and after that any other training besides that would be to move up the ladder'. Hands-on or on-the-job training is integrated into the production hierarchy.[2]
>
> On-the-job training is integrated with the internal shopfloor hierarchy at the Compton Company. Lead hand or foreman trains the 'labour-type people' as they are hired. Training for production workers is exclusively on-the-job and by demonstration. "[The foreman] just shows him. In most cases he shows him. We have internal books with specifications -- our own company specification for the different products. Some time is spent in that. Basically most of the training Is done right on the floor where they actually see what he's talking about." Training involved in moving up the ladder is initiated by the foreman of a shift, "A lot of the shifts the foreman will kind of take somebody in hand and advance them." There is also a foreman who specializes in training, going from shift to shift working "with these people that seem to show an eagerness to learn and advance. He spends most of his time with them, showing them different jobs."

The foremen themselves had been trained--or learned--on the job. They were, in the view of the personnel manager we interviewed, knowledgeable but, as he phrased it, they had no 'theoretical' knowledge of plastics processing. Foremen themselves are recruited internally. "We hire a few people from outside (who have had previous experience working in plastics].... but most of the rest of the people we have now are being trained on the premises by ourselves. We haven't found a place where you can go and hire a foreman that could come in and work in our plant. [It takes] a lot of development to learn the process. There just doesn't seem to be any training facility that we're aware of." Training in and advancement in set-up and quality control departments also drew on the pool of plant-trained people. The Senior Set-up Man who runs the Set-Up Department and has "probably been doin' it for twenty years," trained the others. Most of the people in Quality Control came from production. The manager we interviewed described the selection procedure: "the Quality Control people go around and they talk to all these operators that operate the machine and they see that, "O yeah, this chap knows how to measure the plate. And he's very interested in quality," and this and that. So suppose you have a requirement, that's the first place we try.

Thus in the Compton Company the entire cycle of learning, including evaluation of performance (apart from the monitoring of performance through productivity) was internal to the shop-floor and among workers. The company relied for the reproduction of skills on the experiential learning of works on the shopfloor. Foremen have learned experientially and from others before them the knowhow they deploy in supervision and in training. They selected who to assign to more senior workers for training; they allocated workers to jobs in which more advanced skills could be acquired. They selected men to act as lead-hands. Advancement into jobs requiring more skills and earning more was entirely through men who had learned the work from others like themselves and experientially. The processes of transmission and storage of skills was internal to the shopfloor and management played no direct part in it.

In the plant described by Michael Burawoy (1983), learning the skills of a turret lathe operator (a good deal more demanding than anything at the plastics moulding plant referred to above) was also internal to the shopfloor. Skills were the basis of nonformal hierarchies among workers. Here workers skills directly differentiated the amount of their workers. This was not so at the Compton Company where plastics processing was automated and production could not be accounted in relation to individuals. At the plant described by Burawoy, training other workers was a cost in lost production to the worker who did the training. Hence workers who trained others received modest compensation for lost time on the

lathe.

> The most frequent arrangement was for operators to break in new employees and to receive setup-man pay (the highest pay scale) for the period if they did not make out after adding the new employee's pieces to their own. In other arrangements, those breaking in were to receive a fixed number of hours, say four, at setup-man pay. But training is still the subject of bargaining and negotiation between operator and foreman. Part of the reason for this lies in the ambiguity of the trainer's obligations to the trainees As the shop euphemism puts it, one doesn't have to "show everything" to the new employee." (Burawoy 1983:102)

Though accountable to management, it is clear that management could not exercise direct control over the process by which skills were transmitted from more experienced workers to trainees. Experienced workers maintained the value of their specialized knowledges and upheld the 'natural' monopoly that the course of learning experientially creates, fending off potential competitors and consolidating the value of a knowledge appropriated by particular individuals.

Workers' control over production of the shopfloor level has been a problem of management from early time. The very institution of foremen has its historical roots in managerial innovations in the late nineteenth century designed to break the power of the gong bosses who could hold a company to ransom, replacing them with a supervisory system in which foremen were employees responsibility for the productivity of the workers they supervised (Montgomery1987). Gangs, of course, were themselves organizations that stored and reproduced skills, as well as selling them as labour power to capital. According to David Montgomery, the new 'We of supervision, in one sense, did not represent a radical break with the past. It was built on both the technical knowledge of skilled workers, which remained indispensable, and the tradition of promotion within gongs. What had been eliminated was collective, deliberate control from the workers' end." (Montgomery 1987:42) Nonetheless the production and reproduction of skills was internal to workers in plants or mines. Newer workers learned from more experienced, as well as, of course from doing the job themselves.

Internal hierarchies among workers were organized to a significant extent around skills. Skills, knowhow, was 'owned' by the more experienced; it gave them advantages in competitive situations over other workers; it also gave them valuable resources that could be shared sparingly in the interests of its 'owner'. Vallas and Beck described the carefully guarded black books of older workers in the pulp and papers mills they studied, containing notes of what they had learned over a lifetime of smelling, tasting, watching, testing, the state of pulp and paper on the roles. Skills were a source of status, whether or not the worker who possessed them was incorporated into the formalized hierarchy of lead-hand, foreman, etc. The processes of reproducing skills among workers gave rise to hierarchies and loyalties among workers that were themselves a barrier to management's ability to control the workplace. Workers' sense of management as outsiders, ignorant of how the work really gets done, is manifest in some of Kusterer's interviews:

> Workers had only very vague idea of the various responsibilities of these men (managers directly responsible for production in their area), and were generally convinced that [they] didn't do much of anything:
>
> (He) doesn't do nothing. Take it from me, he doesn't know nothing from nothing about this department... A good thing he doesn't do nothing because everytime he does come in and do something, it just fucks somebody up.
>
> I don't know what he (other manager) does do in his office. Now that you mention it, I wonder what he is supposed to be doing when he's not out with us. Not that he does anything when he's out of his office either. (Kusterer 39-40)

There are indications in such accounts of the skills storage and transmission processes internal to the workplace of the emergence of loyalties and nonformal bonds founded skills transmissions, the sharing of experience and knowhow among skilled workers, reputation, and competition. Here again was an organization among workers closed off from management which management, over the years and with advancing managerial technologies, has sought to break through. Montgomery (1987:41), writing of the

late nineteenth and early twentieth centuries, comments on the systematic deployment of competition between workers as a method of countering the bases of solidarity residing potentially in the process of transmitting knowhow from the skilled and experienced to beginners. A century later, Wallace Clement's (1981) study of hardrock mining records how foremen and management used competition in attempts to undermine the hierarchies and loyalties among workers that the miners' monopoly of skills training ability gave rise to.

> The use of existing mining crews to teach novices the necessary skills--because they certainly do not learn them in one week's class--as a disruptive effect on the crews themselves. A Thompson miner commented: "We've got to train these guys. When a new guy gets in the stope you have to take your time to train him. It costs us money. You train somebody and they up and leave." Not only is their bonus affected, but people are seldom allowed to work together for long periods of time. As a Sudbury miner said: "When a couple of fellows got together and they become pretty well experienced and good miners, then one would be the leader and the other the driller. Afterward the bosses would get the other fellow [the driller] to either bid on a leader's job or they would appoint him to a leader's job anyway, so they could put a couple of new men with these two fellows. As a rule, if two fellows worked together for two or three years, well, that was long." (Clement 1981:284)

**Intersections of shopfloor and community organization of skills reproduction**

When it comes to the nonformal learning that was among men of working-class communities, there is little to go on. We can get clues from ethnographies of working- class communities; we can make guesses. Where workplace and community intersected was in institutions like taverns. Kusterer, Halle, Dunk, and others describe the tavern or bar as a place where men talked over the doings in the workplace in exchanges that enter the system of non-formal knowledge as they relate back and can be taken up on the shopfloor.

In the community context, I am interested both in institutions (such as the traditional working-class tavern or bar) that intersected with the shopfloor storage and transmission system that I've described above, and in what are generally not recognized as skills in the sense discussed above, namely a familiarity of certain kinds of tools and their uses (a mitre-box for example), with particular geographies and patterns of traffic, with what is inside the walls, underneath the floor, connects the gas cooker to the mains, the electric light switch to the lights, the spark plugs (in an older car) to the carburetor, the workings of transmission and clutch, and so on, knowledges that are prior to and presupposed in the learning of more specialized skills and are prior to and presupposed in the kind of work that working-class men have traditionally undertaken and been assigned to in the industrial enterprise. Such 'familiarities' became visible as skills, for example, when women first began to take vocational courses in preparation for entering trades and found that the shop course they participated in took for granted extensive prior experience in the names and uses of a variety of tools and practices associated with them. There is no formal training. Similarly in the workplace, non-formal knowledges of the particular local histories and geographies of plants, machines, and people have been maintained and transmitted in gender specific hierarchies of learning. This is knowledge this is prior to and taken for granted in knowledge at more 'visible' levels. Michael Polanyi uses the concept of 'tacit knowledge' to locate what people known which is not explicit and has not been inculcated through a formalized process of instruction. He uses as an example the spelling of the railway station in Wales with the longest known name. It is one thing, he says, to know how to pronounce this. But to know that it is the name of the station is presupposed in reading it as such. It is a tacit knowledge on which other knowledges rely. In an analogous way, being able to do a particular kind of job depends on tacit knowledges which have, at least in the past, largely been learned experientially by doing, by watching and being 'shown' by someone who knows how, and in informal relationships among people, relatives, friends, peers, or workmates, in workplace or community or household settings. This kind of learning goes on among people who do not occupy institutionalized positions designating them as responsible for transmitting formalized systems of knowledge and skill. It has gone on in working- class communities between kinfolk of senior generations and their juniors-fathers, grandfathers, and uncles teaching boys and young men by tacit example, criticism, and occasional instruction or intervention; aunts, mothers, and grandmothers teaching girls and young women in similar fashion. We do not know how wide the networks of learning extended or how young people, and, in this investigation, particularly young men,

were involved.

Studies of the workplace treat it in isolation from the community from which workers came. The development of mass production is intimately tied to the corresponding establishment and sustenance of large working class communities that supplied the labour and reproduced a labour force across generations. Here, and in the further stages of the study reported here, I want to explore the intersections of the worker- controlled skills learning on the shopfloor with non-formal skills learning among males in the community. My notion is that these relations were intricate and that they are likely to have intersections also with union organization. In the transmission and storage of skills among men, across generations, was implicated in and integral to the social organization and relations of both workplace and community. For this reason, the phase of the research reported on here, explored studies of working class communities to see if they would yield resources. The results were, unfortunately, rather sparse. On the whole, studies whether of workplace or community tend to observe the boundaries created by capitalism so that workplace is studied quite separately from the community it sustains or sustained.

For the most part, what I could learn yielded information about informal associations of workers from a given plant. Taverns or bars were, as might be expected, quite important, at least up to the 1960 and 1970s. David Halle, writing in the early 1980s, stresses their importance in working class life.

> Social drinking, and eating, in a range of taverns, bars, and restaurant-taverns still play an important part in workers' lives, though much less than during the heyday of the saloon. Many young single men and older workers who have retired spend several hours a day in the tavern. Married workers divide about equally into those who spend as much time in the tavern as when they were single and those who enter only occasionally, preferring to go straight home after work.

He distinguished between what he calls "occupational bars" close to work sites and social drinking spots that are more part of the residential neighbourhoods. In the former:

> The social class of the customers reflects the nature of the work site. For instance, taverns close to factories in older urban areas are heavily patronized by blue-collar workers and first-line supervisors.
>
> Within fifty yards of Imperium [the plant Halle studied] are six such taverns, serving the various factories close by. One of these occupational taverns, Lesniak's, is directly opposite Imperium and is frequented by many of the chemical workers during lunch and before and after work The union local, composed of Imperium workers, holds a monthly meetings there, as well as social events, such as parties for workers who are retiring. (Halle 1984: 35)

Notice that he reports workers and first-line supervisors as frequenting the same bars, suggesting that hierarchial organization developed on the shopfloor carried over into relationships outside the plant. Other ethnographers of working-class communities describe a variety of settings in which workers associate off the job. In LeMasters' study, work crews on the job "often have a few beers together... interpersonal relations are quite significant. They may not always like their crew buddies but the interaction is rich." (21) They talk about the weather on the job, mistakes made on the building site, arguments with foremen, accidents, practical jokes, and so on. LeMasters makes no specific reference to skills talk but surely such talk itself contributes to the experiential knowledge of members of the work crew as well as displaying and acknowledging skills hierarchies developed on the worksite.

Halle also describe a variety of activities off the job that the workers at Imperium are involved in.

> It is hard to exaggerate the importance of various kinds of sports in the lives of most of these chemical workers. More than half are enthusiastic fishermen and hunters, and this is true regardless of age or marital status. Some belong to clubs. In the fishing season groups of twenty or thirty men from such clubs, well supplied with beer and sandwiches, leave on a rented bus for a weekend in Boston or a day off the south Jersey shore. Hunting clubs organize weekends in lodges in south Jersey or take bear-hunting trips to Maine that last several days (plate 24). Some of these fishing and hunting clubs are run by the taverns, and a few taverns still sponsor football and softball teams. In the football season busloads of

men go to games in cities like Pittsburgh and Washington. (39)

Other men prefer smaller groups. Six lmperium workers own fishing boats in which they regularly take groups of three, four, or five fellow workers or friends (plate 25). Often men rent boats. Many workers who hunt make trips with a few friends, usually to Maine. Partly because of their interest in hunting and fishing; some have a tendency to develop a keen interest in gastronomy, for the culmination of a hunting or fishing trip is eating the catch. Some workers are accomplished chefs, exchanging recipes for items like lobster or bluefish. (Halle 1984:39 40)

Neither Halle nor LeMasters identify any cross-over from shopfloor skills hierarchies to community or neighbourhood reputation or status, other than that implied in Halle's reference to first-line supervisors visiting the some tavern as other workers. Dunk however describes reputational patterns associated with manual skills. We might expect therefore (and want to explore) the character of skills reputation in the community associated with a given industry or plant.

The negative image of the kind of knowledge exhibited by management also results from the fact that there is a great respect among workers for anyone with practical skills. Flattery often takes the form of a statement such as "Joe there, he's one hell of a nice guy, and a good electrician too." . . . These practical skills are not, however, embedded in social status differentiations, although they are an important aspect of an individual's reputation. The possession of practical skills is a necessary if not sufficient element in one's popularity. In other words, it is the demonstration of the actual use value of one's knowledge and one's skills in ways which are readily evident that counts in the assessment of an individual and of a way of thinking. The mere possession of formal training of a degree or diploma, is not sufficient cause of respect. (Dunk 1991: 146-71)

LeMasters suggests an association with the do-it-yourself approach to household repairs and renovations.: "Whenever possible they avoid the market place, especially when it comes to constructing homes refinishing interiors, making car and small equipment repairs, and soon. There is a flourishing 'informal' labour exchange between individuals with different skills and different kinds of equipment." (Dunk 1991: 146-7)

**The gender organization of skills transmission**

According to David Halle (35), these leisure activities are strikingly 'sex-segregated," involving many of the married men and most of the single. LeMasters' 1975 study of a working class community describes, at least on the part of some informant, deliberate strategies on the part of men of the senior generation designed to prevent the 'feminization' of boys and young men.

> These men share the belief of the British upper class that boys should never be reared by their mothers or other women, since they will make a "goddam sissy" of him. Since these men do not have the English boarding school system to rear their sons, they have to improvise. In the past, one of their strategies was to get the boy out of school as early as possible and get him on the job with other men, but this has become increasingly difficult as the craft unions have begun to require a high school diploma for entering apprentice programs.(LeMasters 1975: 112)

His study suggests that the senior generation of that time might have consciously sought to wean boys from the influence of school, identified with feminization, stressing the importance of a toughening that would prepare a boy for what he could expect to confront in the future. Workers favored weaning boys away from school to get them away from women teachers and he reports a sheetmetal worker favoring a conscious effort to wean boys away from school.

> If you can't get the boy out of the school system and away from the "goddam women teachers," then the next best bet is to get him into school athletics, especially football. One man, a sheet metal worker, put it this way: "I'll say one thing for that football coach up at the high school--he makes those guys get clown in the mud and go at each other. By God, that's what they need to get along in this world. (112)

Glimpses such as this suggest that Paul Willis's focus exclusively on the class dynamics of the school may miss the dynamics of learning masculinity from a senior generation consciously concerned to discourage boys from an educational exposure that would undermine their masculinity. Conceptualized very differently, Arthur B. Shostak (1969) records very similar patterns of alienation among those working class youth he labels as "rebels" and "accommodators" in his 1969 study of "blue-collar life" in the United States. 'The 'rebel' group is characterized as likely to become involved in 'delinquent' activities, but otherwise they two do not seem markedly differentiation. Those who accommodate stay in school, usually in a predominantly working class high school, they are likely to be steered into vocational courses. Their "youth culture" emphasizes:

> fun and adventure; a disdain for scholarly effort; the more or less persistent involvement in 'tolerated' status offense like drinking, gambling, occasional truancy, "making out" in the sense of sexual conquest, driving cars before the appropriate age, smoking, swearing, and staying out late. (Matza 1961: 116, quoted by Shostak 1969: 150)

Here and at other points in this account, a distinctive and traditional working-class culture of masculinity seems to surface. The lack of interest displayed by blue-collar youth in this group for continuing on to college even when they "possess high academic aptitude" (151) suggests that they may share the kinds of emphasis on manual rather than on 'mental' skills suggested in the quotation from LeMasters above. The same would seem to surface in Shostak's account of educational and career decisions made by the group of blue-collar youth he describes as "the achievers" who successfully make their way into college. They appear to share values that downgrade non-manual skills, both in themselves and in relation to the kinds of occupations to which they can expect to get access. Every now and again, the 'influence' of a senior generation becomes directly visible, though negatively valued, as when he writes of the 'uneven and unreliable knowledge" of the labour market transmitted to blue-collar youth by 'well-meaning parents, friends, and the mass media.' (Shostak 1969: 153).

**In conclusion**

At this stage of investigation, this paper has no conclusion. It has done no more than bring together the uses made of existing literature as well as some previous research to explore the dimensions of skills storage and transmission systems as they have been, in the past at least, vested in social organization among male workers both in the workplace and in the community and in intersections between them. I have made the following points so far:

1. The destruction of the social organization storing and transmitting manual skills among men in working class communities as a contingent effect of the restructuring that destroyed the great working-class communities of the past;
2. Within the workplace itself, the development of managerial technologies expropriating workers tacit skills and seeking to gain exclusive control over the internal labour market of plant or corporation;
3. 1 have described some of the characteristics of skills storage and transmission as aspects of social organization among workers on the shopfloor and suggested, drawing on available evidence, the kinds of social relations the processes were part of;
4. Drawing again on ethnographic literature, I have made use of some of the rather scant descriptions of associations among men that may be at once contexts in which skills and knowhow are transmitted, and exchanged, and in which respect and reputation established in the workplace may transfer to standing in the community;
5. Finally I have again drawn on ethnographic materials to identify the distinctively gendered organization of the system of skills storage and transmission (I take for granted that an analogous story could be told of women in working class communities and the transmission of skills across generations, though I think it would look very different).

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**Endnotes**

1. Moore's movie, 'Roger and Me' showing the devastating effects on Flint, Michigan of the removal of

the GM auto production refers to the multiple personal relationships of family and friends that were disrupted and destroyed. Along with the destruction of a way of life was, I suggest, a destruction of the non-formal systems of organizing and controlling the production and transmission of knowledges on which companies such as General Motors had relied for so many years.

2. The personnel manager of another company viewed this as a general feature of the plastics processing industry: it "has that 'promotability' from inside, from the plant floor, whether you be a material handler or what have you. And then again to trouble-shoot machines and start learning -- a lot of that was just the same."

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the research network for
New Approaches to Lifelong Learning (NALL)
OISE/UT
252 Bloor St. W., Room 12-254
Toronto, ON M5S 1V6
Phone: (416) 923-6641, x2392
Fax: (416) 926-4751
Website: www.nall.ca